Assignment-1

Assignment Date	21 September 2022
Student Name	Aathish.D
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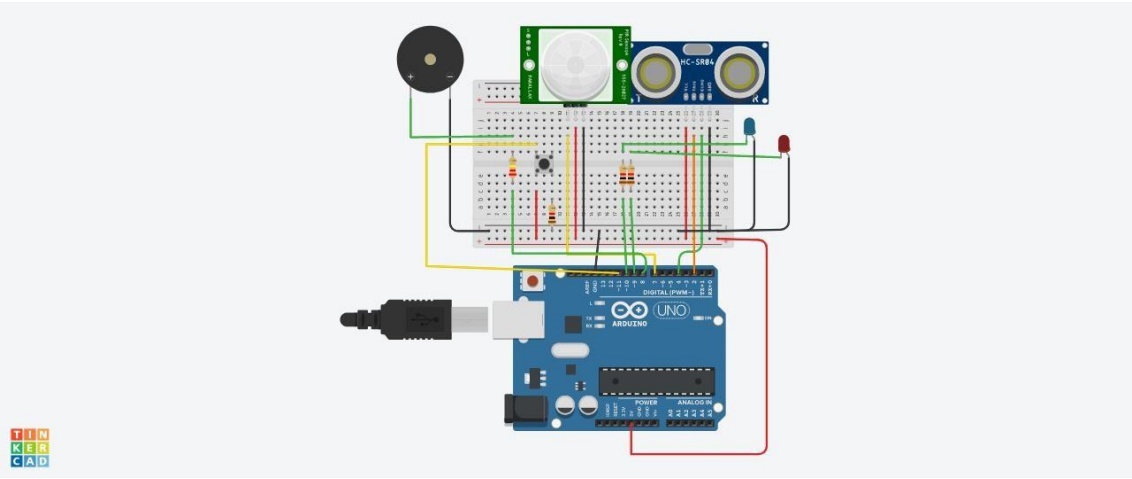
Maximum Marks	2 Marks

Smart Home:

Circuit:



Components:

Components	Quantity
Push Button	1
Red LED	1
Blue LED	1
PIEZO Buzzer	1
Ultrasonic Distance Sensor	1
PIR Sensor	2
Resistor (220,560,10K)	2
Arduino R3	1
Breadboard Small	1

Code:

```
const int trigPin = 2;

const int echoPin = 4;

const int pirPin = 7;

int pirState = LOW;
const int buzzerPin = 8;
const int redLED = 9;

int redBright = 0;

int redFade = 5;
const int greenLED = 10;

int greenBright = 0;

int greenFade = 5;
const int button = 13;

void setup() {


pinMode(echoPin, INPUT);
pinMode(pirPin, INPUT);
pinMode(button, INPUT);
pinMode(trigPin,OUTPUT);
pinMode(redLED, OUTPUT);
pinMode(greenLED, OUTPUT);
pinMode(buzzerPin, OUTPUT);


  Serial.begin(9600);

}


void distance()

long durationInDigit;

long distanceInInches;

digitalWrite (trigPin, LOW);

delayMicroseconds(2);

digitalWrite (trigPin, HIGH);

delayMicroseconds(10);
```

```
digitalWrite (trigPin, LOW);
durationInDigit = pulseIn(echoPin, HIGH);
distanceInInches = durationInDigit/74/2;


   Serial.println(distanceInInches);


    if (distanceInInches > 15 && distanceInInches < 30) {
      digitalWrite(greenLED, HIGH);
      digitalWrite(redLED, LOW);
    }


    if (distanceInInches < 10) {
    digitalWrite(redLED, HIGH);
    digitalWrite(greenLED, LOW);
    }


    if (distanceInInches > 10 && distanceInInches < 15){
      digitalWrite(redLED, LOW);
      digitalWrite(greenLED, LOW);
    }


    if (distanceInInches < 5) {
      digitalWrite(redLED, HIGH);
      tone(8, 250, 2000);
      digitalWrite(greenLED, 0);
    }


    if (distanceInInches > 5 && distanceInInches < 10){
      digitalWrite(redLED, HIGH);
      digitalWrite(buzzerPin, 0);
      digitalWrite(greenLED, 0);
    }
```

```
    if (distanceInInches > 30 || distanceInInches < 0){
      Serial.println("Distance Incalculable");
    }

  delay(500);
  }

void reset() {
  if (digitalRead(button), HIGH);
   digitalWrite(pirState, LOW);
   digitalWrite(redLED, LOW);
   digitalWrite(greenLED, HIGH);
   digitalWrite(buzzerPin, 0);
   //digitalWrite(echoPin, 0);
}

void loop() {

  distance();

  int pirState = digitalRead(pirPin);

  if (pirState==1) {
    Serial.println("Motion Detected!!!");
    digitalWrite(greenLED, LOW);
    digitalWrite(redLED, HIGH);
    digitalWrite(buzzerPin, 1);
    delay(500);
  }
```

```
   if (pirState==0) {
     Serial.println("Detecting...");
digitalWrite(greenLED, HIGH);
digitalWrite(redLED, LOW);
digitalWrite(buzzerPin, 0);
delay(500);
       }


  }
```